Accelerator Systems Division Highlights for the Week Ending November 2, 2001

ASD/LBNL: Front End Systems

The round-the-clock IS/LEBT beam tests ('24x7') started on Oct. 29, utilizing a 0.3-mm coated antenna and resulting in a 38-mA, 3% duty factor beam, which turned out to be the most stable mode of operation. Three members of the ORNL-SNS ion-source group are participating in the shift work and getting more familiar with the operational aspects of ion source and LEBT. Until Nov. 1, two major interruptions occurred, one caused by a defective RF connector, resolved within one hour, and the other one caused by electromagnetic interference from operating a welding device that shut down the LEBT pumps. This second event led to the ion source being operated at a few Torr gas pressure, which destroyed the RF antenna. Operations with a new 0.3-mm antenna were resumed within 4 hours, but the source now emitted a substantial parasitic electron beam that incapacitated the extractor electrode support around 10 pm on Nov. 1. We decided to shut down the operations for that night and repaired the system during the following day. By close-of-business on Nov. 2, the LEBT had been refurbished, and the cleaned source was mounted again and pumped down. First plasma was produced at 6 pm, and expectations are that beam operations will be resumed later this night and continued through Nov. 6. The second 0.3-mm antenna had shown no signs of any damage after being operated for about 30 hours and is being used for this new running period.

The signal of the measured LEBT beam current has been patched into the EPICS control system environment, allowing remote display (a 25 Ohm terminating resistor is being used).

A reassessment of our LEBT emittance data showed that they are affected by a substantial background signal, leading to unrealistically high rms values. After adequately subtracting this background, the values for a focused 33-mA beam are within 10% of nominal in the horizontal plane and 25% better than nominal in the vertical plane.

The RFQ has been pumped out and currently shows 1 E-7 Torr average pressure with only two of four cryo-pumps being utilized, very well within nominal specification. Six of eight RFQ power-coupler windows have been fully conditioned, and the last pair has reached full power at 2% duty factor, good enough for RFQ power conditioning. Water-distribution and cabling work is proceeding.

The second MEBT rebuncher cavity was announced to be shipped by the vendor today; the last two cavities are to be copper plated next week. All power couplers for the cavities have arrived.

We prepared three presentations on front-end progress and physics issues for the upcoming DOE-Review; six FES members will attend the review in Oak Ridge.

ASD/LANL: Warm Linac

Several LANL staff visited *DynaPower* in Burlington, VT for the design requirements and preliminary design review of the HVCM substation and SCR phase controller. The review was successful, and all plans were approved. (WBS 1.4.1.2)

The first two DTL tank segments arrived at GSI for copper plating. There was a minor hitch at the German customs office, but it was resolved by a phone call from the LANL customs office. (WBS 1.4.2.2)

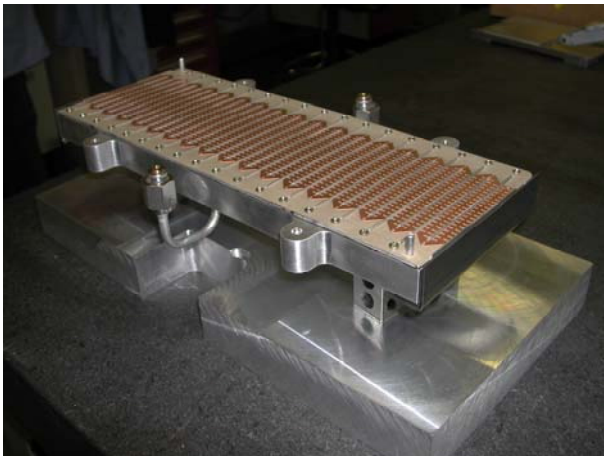
The DTL cold model arrived at ORNL and the recording shock watch was returned to LANL for analysis. (WBS 1.4.2.9)

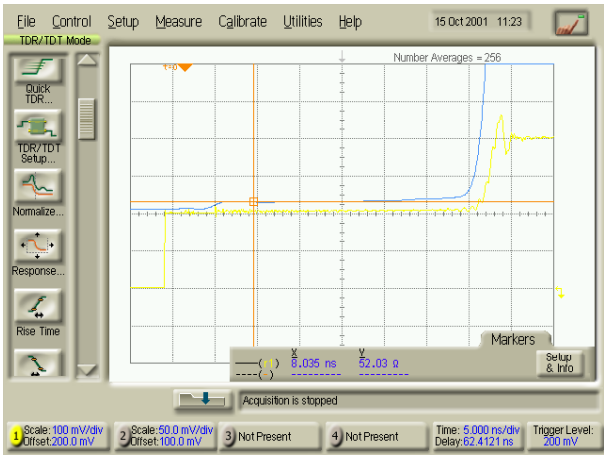
We completed a tech note (104040300-TR0002-R00) that documents the CCL and SRF quadrupole magnet requirements. Following agreement with the AP staff in ASD, we increased the power-supply requirements for magnets in the transition regions and the SRF linac from 500 to 525 A. The new requirements are included in a revision (R01) to this tech note. (WBS 1.4.4.3)

We published a 381-page SNS CCL Water Cooling and Resonance Control System Final Design Report (104040500-DE0001-R00). (WBS 1.4.4.5)

We completed fabrication and mounting of the first two MEBT chopper structures (one shown in Fig. 1, left). The structures were fabricated using shims to center the striplines between the separators during the epoxying process. (WBS 1.4.5.1)

Figure 1. Assembled MEBT chopper plate (left) and TDR of the impedance with ground plain using a 2-ns risetime (right).





We successfully tested the chopper structure impedance (Fig. 1, right). The impedances are about 51.5 and 52 ohms, values that can easily be tuned down to 50 ohms by adding a small amount of capacitance distributed along the outer portions of the meander circuit boards. The mounting brackets on the lids from LBNL have been modified slightly to allow the structures to be mounted with larger diameter bolts and to provide clearance around the high-voltage connector ports. We expect to have the first structure assembly ready to ship by the first week on next month. (WBS 1.4.5.1)

We propagated a signal for the first time through the entire BPM processing chain, consisting of the analog front end, the digital front end, and the PCI motherboard. (WBS 1.4.5.2)

We began lifetime tests on the prototype six-inch-stroke wire-scanner actuator. (WBS 1.4.5.2)

We finished the layout of the first beam box in the D-plate that allows insertion of all four required devices as long as they are interlocked so only one goes in at a time (Figure 2). (WBS 1.4.5.2)

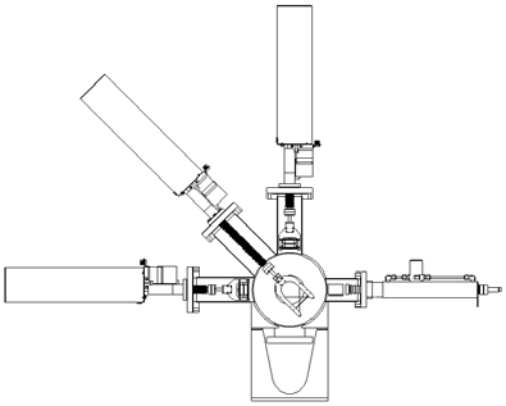


Figure 2. First beam box on D-plate showing multiple diagnostic actuators (wire scanner, view screen, vertical slits, and horizontal slits) with the wire scanner inserted.

The klystron and modulator for the JLab RF test stand are completely assembled (Fig. 3), filled with oil, and successfully tested at full power (~ 1.25 MW), and full rep rate and pulsewidth (60 Hz, 1.3 ms). Remaining tasks are to make and document a few measurements, such as gain curves, and then to prepare for shipment. (WBS 1.4.1.1)

Fig 3. Klystron and modulator for the JLab test stand under high-power tests at LANL.

David Anderson (ASD) was at LANL to troubleshoot SCR control board issues on the prototype high-voltage converter modulator (HVCM). (WBS 1.4.1.2)

Hengjie Ma (ASD) was at LANL to work with the LLRF team. The Acceptance Criteria for the LLRF system handoff is complete. (WBS 1.4.1.3)

Machining of the last tank section for DTL Tank 3 has been completed and the tank has been shipped to Germany for plating. (WBS 1.4.2.2)

Two prototype DTL tank pieces have been copper plated. Results look good with an improved surface finish relative to the original prototype piece. We are now ready to plate all three DTL Tank 3 sections. (WBS 1.4.2.2).

Fabrication of the numerous DTL ancillary hardware (Figs. 4-6) continues well at various shops in Albuquerque as well as in Indiana. (WBS 1.4.2.2)

Fig. 4: DTL Drive Iris Fabrication

Fig. 5: DTL Slug Tuner Fabrication

Fig. 6: DTL Vacuum Port Fabrication

We encountered an assembly problem in the insertion of the DTL EMD coils in the drift tubes. The leads of two coils were discovered to be misoriented by 90 degrees. Drawings have been corrected and two new coils are being procured. This may cause a one-week delay in the production of the EMD type drift tubes. We are looking for ways to minimize the schedule impact. (WBS 1.4.2.2)

The diagnostic hand-off acceptance criteria have been completed. This is the sixth and final major acceptance criteria document between LANL and ASD. (WBS 1.4.5.2)

The physics team formulated a workable solution to the neighboring-mode overlap problem for the CCL bridge coupler. (WBS 1.4.5.3)

An analysis of remaining project risks for the linac and their potential impact on future project contingency has been performed and submitted to the SNS Project Office. (WBS 1.4.6.1)

ASD/JLAB: Cold Linac

Leak checking of warm compressor oil coolers and after coolers has been completed. Oil processing has begun.

Assembly of the oil removal charcoal vessel is complete, except for the outside band heaters.

Turbine expanders for the 4.5 K cold box have been completed. Main heat exchangers have been delivered and the vendor has received JLab bayonets

The outside of the liquid helium dewar has been cleaned in preparation for painting.

Fabrication of remaining transfer line components continues.

Dehydration equipment has been received for the instrument air system.

Investigation of problems with TESLA seals continues.

Cryogenic tests of the FPC outer conductor to date have been successful.

Fundamental Power Coupler Testing at LANL achieved peak powers of 1 MW into a matched load, at 60 Hz with a 700 μs pulse, limited by heating of the waveguide section that resonantly couples the two FPCs.

Cryogenic tests of the FPC outer conductor have begun.

Work continues on high-power RF test stand infrastructure installation.

ASD/BNL: Ring

Work continued on the laser wire test set-up in the AGS. The laser assembly has been integrated with Controls and is almost ready to go. Tunnel connections and motor testing are next. Plans to conduct laser radiation tests in BLIP are underway.

Continued test plan for differential thermal expansion of the Ring BPMs during 400C vacuum firing.

H. Ludwig sent radiation dose rate estimates of the HEBT Momentum Dump to K. Reece, as per Ken's request.

The spec package for the Medium Range Power Supplies has been revised and adjusted for the 1.3 GeV option. Best and final bids are in and are being evaluated.

Work continued on first article magnets for the injection kickers and the extraction kickers.

The contract for the 30Q44/58 quadrupoles has been approved by BNL/DOE and awarded to the Budker Institute of Nuclear Physics (BINP) of Russia.

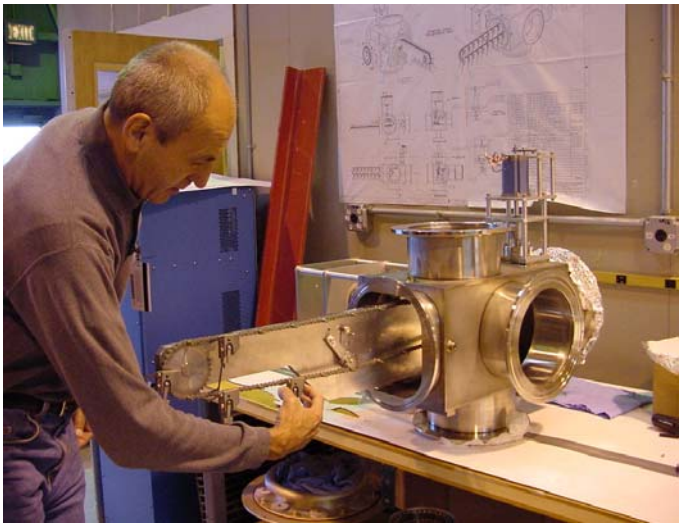
Our magnet vendor, New England Technicoil, reported that they plan to ship a first article magnet (21CO26/21CS26) to BNL on Nov 1st. Dave Passarello (BNL/QA) visited the vendor's plant this week for a pre-shipment inspection.

Work was completed on the 17D120 reference magnet, including installation of its Hall probe. The power supply reference magnet was sent to SNS/OR for display during the upcoming DOE Review.

Tesla's first article HEBT dipole (8D533) and ring quadrupole (21Q40) arrived this week from England. The dipole is being rerouted to ORNL for the DOE Review. The quad will stay at BNL for acceptance testing.

Figure #1 – First Article 21Q40 Quadrupole

Figure #2 – First Article HEBT Dipole Magnet (8D533)



Controls:

Two new contract employees started with the SNS/ORNL controls team this week. Bill Fletcher will work with Herb Strong on Cryogenic controls. Bruce Hanan will work with Bill DeVan with the specification, design and acquisition of network hardware.

We participated in the dry runs for the upcoming DOE semi-annual review.

A dry run was also held for the Personnel Protection System (PPS) Final Design Review, currently scheduled for mid-December.

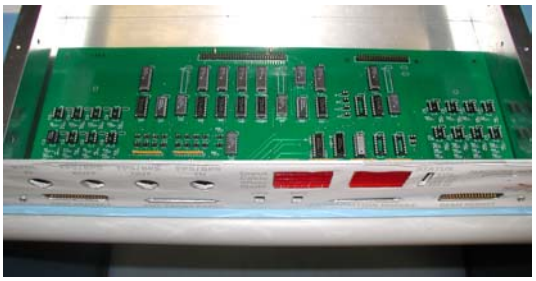
The report of the Final Design Review Committee got the SNS Global Network was received this week. There are a number of issues raised, and a response will be prepared.

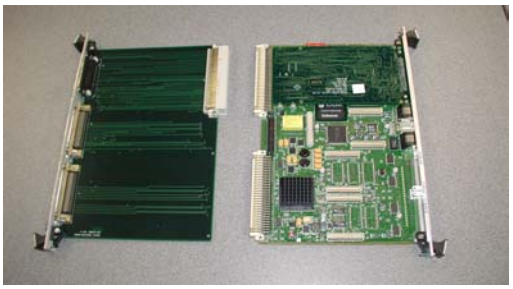
The final design review for the 4.5 K cold box was held at the Linde Pro-Quip Corporation facility in Tulsa, OK. The vendor provided a detailed specification for the implementation of the interlocks and automatic sequences for the cold box turbines and equipment by SNS on the SNS provided PLCs and EPICS systems. SNS and JLab personnel are to review this information and provide comments to Linde. Implementation of the system will be completed after all comments are resolved.

The Beta version of the latest EPICS release (EPICS v3.14.0 Beta 1) was received and is running at SNS under Solaris. A Linux compilation is proving difficult – perhaps next week.

The SNS/LANL controls team participated in a system requirements review for the Linac high power rf (HPRF) Transmitter/Modulator control rack. Components for HPRF testing are being assembled at LANL.

Below are some photos of prototypical Machine Protection System (MPS) modules:





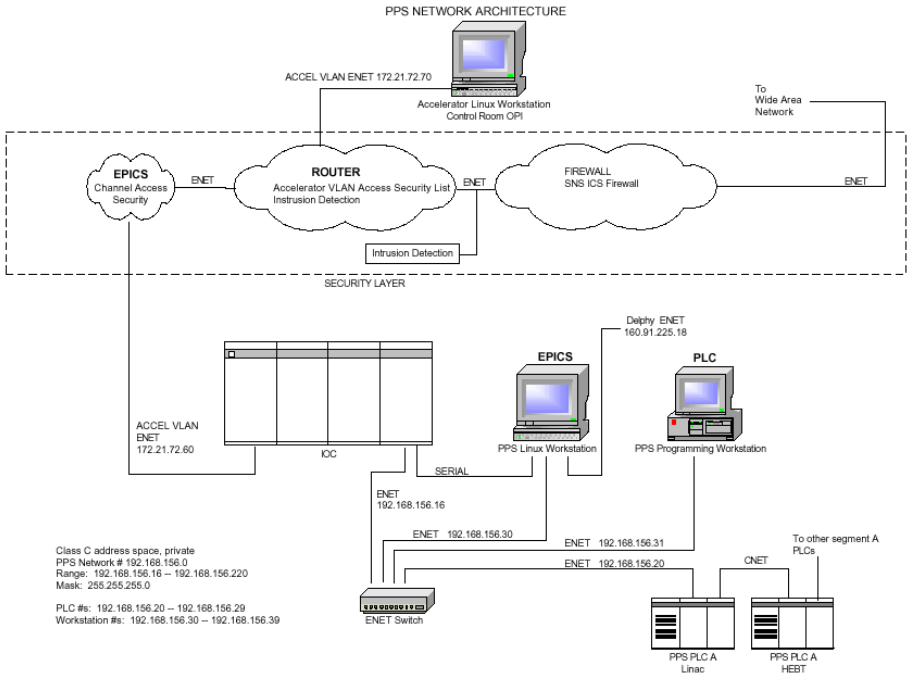
A new post-doctoral fellow, Yongbin Leng, started with the SNS controls team at BNL this week.

The Berkeley controls team supported the 24/7 operation of the ion source this week (for as long as it lasted). An important improvement during the week was the addition of the Faraday Cup current to an EPICS-readable scope, so that remote observers of the ion source operation can monitor the current being delivered.

An EPICS-based automated conditioning sequence has been brought into service to facilitate conditioning of the RFQ, and is being used routinely.

Network Final Design Review comments were received from the review committee, and a meeting was held to formulate a response. Some of our plans for network administration will probably be modified as a result of the comments, however no significant changes to the hardware design are anticipated. Preparations are being made to procure parts for prototype communications cabinets.

Network-based testing of Controls SNS private network was started. A complete mock-up of the Personnel Protection System Sub-Network has also been set up, installed and is under test in the controls laboratory. This architecture is illustrated below:



A three-day 75% review of the Target Utilities design was held, which included the PLC cabinets, PLC wiring, and PLC network ControlNet and DeviceNet architecture.

Work continued on compiling the most recent version of EPICS under Linux. This has turned out to be more problematic than anticipated. The host side works – the target side not quite yet. We have been "95%" there for a week.

The second "first article" versions of the two types of SNS standard VME crates were received and tested this week. One did fine.

Considerable effort was expended at LANL in revising device and signal names to conform to changing interpretations of the naming SRD. The SRD will be revised for clarification. Difficulties in reconciling the naming scheme with the technical database schema are surfacing, and changes to the schema are under discussion.

Preparations were made at LANL for the controls part of the SC Transmitter FDR in San Diego and the PS/Modulator control rack FDR in Albuquerque next week.

At BNL, a design fault was found in the tests of the power supply interface module. An effective software workaround has been developed, but an effort is also underway to fix the problem at its source (in firmware.) It has been demonstrated that the Power Supply Controller will run at 4000Hz with timing triggers for many hours without a problem.

The system software for the timing boards continues to be developed at BNL. Drivers and Epics Support for the Event Link Master and Slave are being tested. A beta release is expected next week.

ASD/ORNL: Integration and Installation Support

DTL Cold model has been partially assembled in the Survey group area.

The Ring main dipole reference magnet arrived last week along with a HEBT dipole magnet stand. The HEBT dipole will arrive Monday a.m.

The Survey group was given a one-week window from the AECM to layout and install survey monuments in a portion of the Linac tunnel. They will mark the floor Friday (11/2/01) and the Davis Bacon craft will core drill for the monuments next week.

Accelerator Physics

Revision 6 of the parameter list was compiled and released. The requisite accompanying PCR ha been accepted.

A survey of all ring and transfer line magnet power supply capability and requirements was completed. All power supply capabilities meet the physics requirements. Checks are being done to see if the amount of margin can be reduced in some cases.

The names for all the linac beamline components are compiled. These are being assigned to the magnets and included in the global coordinate distribution.

Talks were prepared and dry run for the upcoming DOE review in areas of Accelerator Physics, Front End Commissioning, Linac Commissioning, Ring Commissioning, and Application Programming.

We welcome Jim Stovall on board at SNS/ORNL (on a change of station from LANL). Part of his responsibility here will be to take part in commissioning the linac and in particular leading the effort in commissioning the SCL.

Operations

Prepared for the Commissioning presentations for upcoming DOE Review including the Target Commissioning plan. Revised the Commissioning Program Plan and put it up on the Web for review and comment.

Ion Source Group

The Big Blue Box for the Hot Spare Stand is expected to be delivered next week.

The order for the RF amplifier has been placed.

While preparing the work package for Rahul Rauniyar, emittance data from JAERI and from LBNL have been reanalyzed. Studying the raw data we discovered that even in the absence of real ion current a signal was recorded equal to about 1% of the maximum signal. In addition, any statistical noise, which yielded negative numbers, was converted to zero. This current offset, when integrated over the entire range of x and x' roughly doubles the apparent emittance. Clearly, zero current corrections should be applied when evaluating emittances because current offsets can never be completely avoided.

Paul Gibson, Rob Welton, and Martin Stockli traveled to Berkeley to assist in the 7-24 ion source test. Benefiting from a $181 Saturday fare, Martin Stockli was able to help with the final preparations on Sunday, October 28. The official test started on Monday 9 am with brief safety training and a less than one hour of training on the ion source system.

A new antenna was installed early afternoon and high potting was completed by 3 pm. By 4:30 pm an 8 mA beam was extracted and 25 mA were reached before 7 pm after a successful cesiation. The entire run, which will continue through Tuesday, November 6, is an important learning experience.

The 0.3 mm thick dual layer coated antennas so far have worked well if the pressure is kept in reasonably boundaries. The only failure occurred when the pressure was rising to 1 Torr after the vacuum control system decided to close all pump valves after being disturbed by nearby welding. As there was no interlock to switch off the RF, the increasing power of the discharge power rapidly destroyed the antenna coating in several locations. An interlock was implemented next day.

Another concern was the LEBT down time because its glue failed in several places. Pre-glued spare parts allowed recovering within 30 hours. The LEBT, being partly held in place by glue, remains a potential concern especially as there are no sensors to monitor temperature of any LEBT component.

Another potential concern remains the high voltage sparks which frequently interrupt operations and communications, sometimes requiring manual resets every few minutes. We have, however, high hopes because the spark rate has decreased over the last day to 1 per hour. Another concern is the less frequent faulty communications with the scopes on HV. These scopes are critical because one displays the reflected 2MHz power, which currently is the only early indication of an antenna problem.

In addition the run allowed us to identify some other potential concerns such as the stability of the lens voltages, which we can be improved by many orders of magnitudes by simply adding some resistors.

The ORNL staff officially participated in 66% of the currently completed 16 double shifts. 18% of these double shifts were completed exclusively by ORNL staff. These ORNL-only shifts were successful even though they included operating the vacuum control system for which we did not receive any specific training. In addition, it included successfully rebooting the sun control computer, which was not possible until waking up a few Lewis's and Lionberger's at 2:40 a.m. to obtain the username required for the reboot. This demonstrates that the LBNL control system is well designed and easy to operate and that the ORNL staff is well qualified to operate the LBNL system despite earlier LBNL concerns.

In addition we met with several LBNL staff members to discuss PPS- and MPS- procurement- and other FE issues.

RF Group

Anderson spent last week at LANL debugging prototype SCR unit control loop with little success. Responded to production HVCM vendors ORNL action items. Fabrication and programming for JLab test stand power supply / crowbar continues, with expected completion by end of month.

Cryo Transfer Line Group

Work continues on the assembly of the "T" sections of transfer lines.

We are welding the 12 Inch pipe of the 80-foot return transfer line.

Work is containing on the 12 inch welding of the vacuum break of the return transfer line that will be inserted into the "T" section.

We are planning a site visit to the warm compressor vendor next week to perform final acceptance of all the warm compressor packages. Delivery of these compressors is still on track for Nov 15-30

Mechanical Group

Magnet Measurement Group

The stand for the HEBT dipole has been received and bolted to the floor. We are making other preparations to receive the dipole, scheduled for Monday. We have pressure tested and freeze protected the eight spare Ring Dipole coils, which will now go into storage.

Electrical Systems Group

Members of the group attended the Extraction Kicker Magnet and Power Supply Final Design Review at BNL on 10/24/01. Overall, the designs looked good, although there were some magnet cooling concerns. These should be resolved this month. SNS is to provide input on spares and operating parameters (especially during commissioning). While at BNL, they also observed progress on the ring RF systems. Cavity power tests are scheduled to begin the week of 11/12/01.

Ken Rust is at BNL the week of 10/29/01 to meet with the manufacturer of the corrector power supplies (Danfysik), and to observe first article testing at BNL.

The corrector power supply specifications for the Linac DTL were reviewed by the group and by the SNS physics group.

An MPS meeting was held on 10/25/01 between BNL, LANL and SNS to define requirements. An agreement was reached including all requirements.

Survey and Alignment Group

Our night observation network campaign is progressing well. Today, Friday, I can report that we have completed elevation measurements and are now about 65% finished with our angle and distance measurements.

We have marked all available floor monument locations in the linac. These marked locations are scheduled for drilling within the next few days.

We have received the LANL DTL Cold Model. Although we have leveled it, we have not had the manpower resources to do much else. Hopefully, next week we will be able to focus on it.

Beam Diagnostics Group

BNL beam diagnostics progress report:

1.5.7.1 BPM: Analysis of differential thermal expansion of Ring BPMs during 400C vacuum firing continues. Shop estimates the parts for four 21cm Ring BPMs will be ready on Monday. We hope to have these PUEs brazed in Pennsylvania before Wall-Colmonoy moves that part of their business to Ohio. The Ring BPM analog front-end electronics design continues. BNL has received parts from the shop for the four 21cm Ring BPMs. These four BPMs are being assembled for brazing. The shop estimates the balance of the 21cm BPMs will be finished in about a month. Shop drawings for the assembly fixtures for the 36cm RTBT, 26cm Ring and 30cm Ring BPMs are in process. The Ring BPM analog front-end electronics design continues.

1.5.7.2 IPM: The possibility of using C magnets rather than picture frame magnets to simplify other aspects of the mechanical design is being re-visited. This week, C-magnet design is being optimized. New field calculations are being made based on dimensions and current layout

1.5.7.3 BLM: Work continues with LND Inc. to develop an aluminum ion chamber with similar (possibly higher) sensitivity, and a total collection time less than 100 usec. Challenge is to maintain high voltage with low leakage. Working with Control group on interface issues. Considering designs to incorporate the threshold comparators for the MPS into our realm of electronics responsibilities. We are examining the possibility to utilize modified versions of the RIC BLM system. Work on a faster ion chamber continues

1.5.7.4 BCM: The analog front-end board has been married to the LANL digital interface board, data has been transferred to the PC and displayed using Matt's test software. Schematics are being updated. Labview software development continues. : Work continues on the digital "glue logic" required to integrate the BCM analog front end to the digital interface board.

1.5.7.6a Carbon Wire Scanner: Work on connector and cabling issues continues.

1.5.7.6b Laser Wire Scanner: LPM control wiring is in progress. Preparation in BLIP is underway for the laser radiation tests. A detection scheme has been finalized A scheme had been worked out with the Linac staff. Approvals from two safety committees are necessary and are being pursued. - (200MeV test in AGS Linac). This week, all connections have been made to the laser wire in the tunnel. Some wiring still has to be done at the racks. We have demonstrated RS232 control of the laser. The radiachromic dosimeter for the BLIP laser radiation test has arrived. We are pursuing committee approval for the test.

LANL beam diagnostics progress report:

WS actuators: We are preparing to test the prototype Huntington actuator under vacuum. Other work underway on the actuator includes specifying the connector types and the brake controls, and modifying the shaft size to accommodate the water-cooling lines for the D-plate slits. Work continues on fabrication of the SCL prototype actuator and beam box. Delivery is on schedule for 3 to 4 weeks from now. Motion tests of the prototype actuator are now in progress. We still must solve a brake control problem. The next step will be to cycle the actuator to failure under vacuum.

WS electronics: Control of the gain channels, the high voltage, and the self-test function has been established under Labview. Testing of the signal digitization is in progress. In lieu of a PCR, written authorization has been received from ORNL to proceed with purchasing the MEBT WS electronics components. The prototype signal processor and actuator are now under computer control. Development and testing is in progress. Initial results are very encouraging. We are on track to deliver six units to LBL by the beginning of December, except for the motor control units, which are not scheduled to arrive until the first week of December. We still have to resolve several interface issues with BNL. We would like to borrow a MEBT actuator to ensure a good interface between the LANL electronics and the BNL actuator.

ED/FCs: The shaft on the prototype air actuator is free to rotate. The bellows may take care of this, or we made need a design modification. The prototype was also delivered with SPST switches. We are investigating substituting DPDT switches. The drawing packages for the ED/FC heads are now in checking.

D-plate: The design of the DTL to D-plate beam box is finished. We are ready to start detailing the design of the beam stop. S. Ellis is working on possible heat treatments / annealing methods for the beam stop cone. The safety factor is expected to be about 4 or 5. J. Wilkinson presented a proposal for a fast IR camera system to monitor the beam stop temperature. The camera system presented cost at least $110k before taxes, not including labor. It is too expensive. An alternative proposal is now being pursued: a simple one-channel IR detector with a narrow band filter that would only sense high temperatures. Reminder - the beam stop is being designed for 26 mA average beam current, 1 ms beam pulses, 60 Hz. But larger beam currents (i.e. 38 mA un-chopped beams) should be able to be accommodated if the beam pulse length is correspondingly reduced.

BPM electronics: Now that the ADC has been mounted to the PCI motherboard, testing and debugging can begin in earnest. In general the results are encouraging. A Labview data-handling problem has been rectified. The noise levels are still a bit high -- the worst case is about 20 counts rms. Also, the FPGA should be modified to output every I- Q pair at 40 MHz, as opposed to the present method of outputting sets of four. The source of the unexpectedly high noise levels has been traced to the 755 MHz LO signal leaking through to the ADC inputs. Temporary fixes are being pursued. We now have a 60 dB dynamic range on the worst channel (the best we can expect is 70 dB). Simulation testing is complete on the gain/calibrate/timing FPGA. We plan to burn the chip Monday.

BPM pickups: Little work was done on the DTL pickups this week due to an ill worker at the machine shop in ABQ. However, if no more problems are encountered we should still be able to deliver the DTL BPMs before late delivery impacts the overall DTL fabrication. Bids have been received for the CCL, TR, and SCL pickups. The next step will be to down-select a vendor and proceed with prototype fabrication. Work continues to repair the leaky feedthroughs on the DTL pickups for tank 3.

MEBT slit and collector emittance gear: On hold until the beam box issue is resolved.

LANL sponsored a nano-workshop to develop a common Labview template for the SNS diagnostics systems. Three team members from LANL participated.

M. Plum attended (via video link) the RTBT interface meeting held 26/Oct/01.

ORNL-SNS beam diagnostics progress report:

Craig has received the first article Faraday Cup. He is setting up to make bandwidth measurements. Dave, Ernest and Saeed are working on the Berkeley emittance device software. EPICS drivers, EDM screens and device names are being generated. Ernest is getting ready to test the digitizer driver developed for us by LBNL. A videoconference among partner labs was held on Monday. Recent work on the emittance measurement system was presented. Tom edited handoff criteria documents based on comments from LANL. These will be signed before next week's DOE review. Diagnostics personnel were involved in several dry runs for this review.
A meeting on emittance scanner software was held last Monday. Tom, Ernest, Saeed and Dave discussed open issues and decided that a presentation will be made at the next diagnostics videoconference. Craig organized the fabrication of a prototype fast faraday cup. He also has been working on a technique for measuring a component's response to a slow (non-relativistic) beam. Craig's Tech. Notes are posted on the AP electronic web site. Dave and Saeed are working with AP (Eugene) and BNL (Alexei) on diagnostic locations in the lattice and naming. Dave finished up the FE EDM conversion and sent those displays to Steve Lewis. Any further work on the Front end EDMs will be done by John Munro. Dave is collaborating with D. Gurd /J. Patton/ J Galambos on Signal naming convention. Tom spent a day at LANL reviewing their significant progress on wire scanner and BPM/phase systems. Tom and Saeed attended the LANL nano-workshop last week on Labview architecture for the SNS diagnostics. They both participated in the RTBT interface meeting on 10/26/01 where Tom presented an overview of the diagnostics strategy. A candidate for the diagnostics engineer position was interviewed.